Apple Displays

See for yourself why Apple's all-digital flat-panel displays are the choice of the most demanding creative professionals. With deeply saturated, accurate colors and the industry's best wide-viewing technology, Apple displays are the perfect complement to your Power Mac G4.

Key Features

Three all-digital active-matrix LCDs.

- The 17-inch Apple Studio Display provides the equivalent workspace of a 21-inch CRT monitor.
- The 20-inch Apple Cinema Display shows more than two full pages of text and graphics, or DVD movies in wide format.
- The 23-inch Apple Cinema HD Display supports high-definition content with room to spare.

Pure digital interface. Ensures distortion-free images that never need adjusting, unlike other flat-panel displays.

Industry-best wide-viewing technology. Provides maximum color quality even when viewed off-axis.

Fast pixel response. Provides the ideal environment for full-motion video editing and playback.

Consistently accurate colors. Supports a wide color gamut; maintains true color from edge to edge and over time; and is immune to heat, humidity, and electromagnetic fields.

Easy to calibrate. Supports measurement devices such as the GretagMacbeth Eye-One calibrator to create ICC profiles for the Apple ColorSync color management system.

Reduced energy bills. Consumes one-third the power of a comparably sized CRT monitor and emits a fraction of the heat.

Clutter-free. Simplifies setup and eliminates clutter with the convenient single-connection Apple Display Connector and two integrated USB ports.

Specification Sheet
Apple Displays

Technical Specifications

Screen size (diagonal viewable image size)

- Apple Studio Display: 17 inches
- Apple Cinema Display: 20 inches
- Apple Cinema HD Display: 23 inches

Screen type

- Thin film transistor (TFT) active-matrix liquid crystal display

Optimum resolutions

- Apple Studio Display: 1280 by 1024 pixels
- Apple Cinema Display: 1680 by 1050 pixels
- Apple Cinema HD Display: 1920 by 1200 pixels

Display colors (maximum)

- 16.7 million

Viewing angle (typical)

- 170° horizontal; 170° vertical

Brightness (typical)

- Apple Studio Display: 200 cd/m^2
- Apple Cinema Display: 230 cd/m^2
- Apple Cinema HD Display: 200 cd/m^2

Contrast ratio (typical)

- 350:1

Pixel pitch

- Apple Studio Display: 0.264 mm
- Apple Cinema Display: 0.258 mm
- Apple Cinema HD Display: 0.258 mm

Screen treatment

- Antiglare hardcoat

User controls (hardware and software)

- System power on, sleep, wake
- Brightness
- Monitor tilt

Connectors and cables

- Apple Display Connector carries digital video, USB, and power
- Two-port, self-powered USB hub

Electrical requirements

- Input voltage: 24.5V to 28V DC carries digital video, USB, and power
- Maximum power when operating: 40W (Apple Studio Display); 60W (Apple Cinema Display); 70W (Apple Cinema HD Display)
- Energy saver mode: 3W or less

Environmental requirements

- Operating temperature: 50° to 95° F (10° to 35° C)
- Storage temperature: –40° to 116° F (–40° to 47° C)
- Operating humidity: 20% to 80% noncondensing
- Maximum operating altitude: 10,000 feet

Agency approvals

- FCC Part 15 Class B
- EN55022 Class B
- EN55024
- VCCI Class B
- AS/NZS 3548 Class B
- CNS 13438 Class B
- ICES-003 Class B
- ISO 13406
- MPR II
- IEC 60950
- UL 60950
- CSA 60950
- EN60950
- ENERGY STAR
- TCO 95

Size and weight

17-inch Apple Studio Display

- Height: 17.3 inches (43.9 cm)
- Width: 17.6 inches (44.7 cm)
- Depth: 6.9 inches (17.6 cm) minimum; 9.8 inches (24.9 cm) maximum
- Weight: 14.6 pounds (6.6 kg)

20-inch Apple Cinema Display

- Height: 17.3 inches (43.9 cm)
- Width: 21.34 inches (54.2 cm)
- Depth: 6.93 inches (17.6 cm) minimum; 10.43 inches (26.5 cm) maximum
- Weight: 18.9 pounds (8.6 kg)

23-inch Apple Cinema HD Display

- Height: 19.2 inches (48.8 cm)
- Width: 24.2 inches (61.4 cm)
- Depth: 7.3 inches (18.7 cm) minimum; 11.1 inches (28.0 cm) maximum
- Weight: 25.3 pounds (11.5 kg)

Apple Displays

Model	Apple Studio Display M7649ZM/B	Apple Cinema Display M8893ZM/A	Apple Cinema HD Display M8537ZM/A
Screen size and type	17-inch (viewable) active-matrix LCD	20-inch (viewable) active-matrix LCD	23-inch (viewable) active-matrix LCD
Maximum resolution	1280 by 1024 pixels	1680 by 1050 pixels	1920 by 1200 pixels
Viewing angle	170° horizontal; 170° vertical	170° horizontal; 170° vertical	170° horizontal; 170° vertical
Color support	16.7 million colors	16.7 million colors	16.7 million colors
Input/Output ports	Apple Display Connector; two-port, self-powered USB hub	Apple Display Connector; two-port, self-powered USB hub	Apple Display Connector; two-port, self-powered USB hub
Agency approvals	ENERGY STAR, TCO 95	ENERGY STAR, TCO 95	ENERGY STAR, TCO 95

System Requirements

- The Apple Studio Display requires Mac OS X v10.1.3 or Mac OS 9.2.2 or later, and one of the following systems:
  - Power Mac G4 with an Apple Display Connector
  - PowerBook G4 with a DVI port and an Apple DVI to ADC Adapter
- The Apple Cinema Display requires Mac OS X v10.2 or later, and one of the following systems:
  - Power Mac G4 with an NVIDIA GeForce2 MX, GeForce3, GeForce4 MX, or GeForce4 Titanium graphics card; or with an ATI Radeon 7500, 9000 Pro, or 9700 Pro graphics card
  - PowerBook G4 with a DVI port and an Apple DVI to ADC Adapter
- The Apple Cinema HD Display requires Mac OS X v10.1.3 or Mac OS 9.2.2 or later, and one of the following systems:
  - Power Mac G4 with an NVIDIA GeForce2 MX, GeForce3, GeForce4 MX, or GeForce4 Titanium graphics card; or with an ATI Radeon 7500, 9000 Pro, or 9700 Pro graphics card
  - PowerBook G4 with a DVI port and an Apple DVI to ADC Adapter
- A second Apple display can be used with a Power Mac G4 via the DVI port on the NVIDIA GeForce4 MX, GeForce4 Titanium, ATI Radeon 7500, Radeon 9000 Pro, or Radeon 9700 Pro graphics card and the Apple DVI to ADC Adapter.

Extended Service and Support

Purchase the AppleCare Protection Plan to extend your service and support to up to three full years. The plan provides support for your Mac, the Mac OS, and many Apple consumer applications, so just one phone call can help resolve most issues. Power Mac and PowerBook customers can also enroll one display for coverage, provided that the display is purchased at the same time as the covered computer. For more information, visit www.apple.com/support/products or call 800-823-2775.

For More Information

For more information about this product or to purchase Apple products, visit the Apple Store online (www.apple.com or 800-MY-APPLE), an Apple Store near you, or an authorized Apple reseller.

Visit the Macintosh Products Guide at www.apple.com/guide for the latest information on thousands of hardware and software products for your Mac.

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Apple Cinema Displays

Technology Overview
June 2004

Introduction

Whether you are generating ad layouts, editing film, or decoding a genetic sequence, Apple provides the definitive system to maximize your creativity and efficiency. Thanks to Apple's powerful dual processor Power Mac G5 line and Mac OS X, the world's most advanced operating system, you can run more applications simultaneously with exceptional reliability and speed. Apple's elegant flat-panel displays complete the fluid, integrated experience.

Building on our commitment to maximizing your productivity, Apple now provides a stunning new window into your work: the 30-inch Apple Cinema HD Display. With a larger workspace than any other Apple display, it represents the latest in a series of breakthroughs from Apple aimed at providing you with the ideal creative system.

While other displays are designed to help suppliers maximize manufacturing efficiencies, the Apple Cinema Display line is designed from the ground up with the professional Macintosh user in mind. Apple carefully considers the requirements of creative professionals who need to see two-page layouts at full size with room for palettes and menus, HD video content at full resolution, or complex genetic sequences.

Apple pioneered the move to LCD technology in 2001 with an award-winning line of all-digital active-matrix flat-panel displays, and has been building the industry's most innovative, elegant displays ever since. Based on the industry's best LCD technology, the Apple Cinema Display line delivers performance that is measurably superior to that of any CRT-based display. And, when compared with other LCD options, the Apple line stands out due to its wide-aspect design, DVI connector, integrated FireWire and USB ports, and the amazing attention to detail of the ultrathin bezel, brushed aluminum enclosure, and adjustable stand.

There are three models in Apple's flat-panel display line. The 20-inch Apple Cinema Display features Apple's innovative widescreen format, offering a large workspace for creative, home, and business users. The 23-inch Apple Cinema HD Display is ideal for customers working with multipage layouts and video, while the breakthrough 30-inch Apple Cinema HD Display meets the needs of the most demanding professional users, offering more screen real estate than virtually any other desktop monitor on the market. All three provide the most advanced technology of any flat panel available today.

If you're purchasing a new Power Mac G5 computer, an Apple flat-panel display completes your system. If you already have a Power Mac and a CRT, consider upgrading to one of these superior-quality, space-saving displays. Or if you already use a flat-panel display, add a second one to your Power Mac for the ultimate in productivity. And if you have a PowerBook G4, an Apple display can extend your workspace even further.[1]

Choosing an Apple Display

Which Apple display is right for you? Although individual needs can vary widely, here are some typical ways in which people can use the different models.

The 20-inch Apple Cinema Display

The 20-inch Apple Cinema Display makes high-resolution, widescreen viewing more affordable than ever. This is a truly professional display for Power Mac, PowerBook, and PC users that measures up to the most color-critical work. With its 1680-by-1050-pixel resolution, this flat-panel LCD is an ideal alternative to a bulky CRT monitor. In fact, despite having only a fraction of the size, weight, and power consumption of a comparable 21-inch CRT, this display provides the same amount of workspace.

- The 20-inch Apple Cinema Display is ideal for page layout. You can view a two-page spread and keep tools and palettes handy at all times in applications such as Adobe InDesign and QuarkXPress. The display's digital design ensures that the colors you see onscreen are the colors you'll get on paper.
- With Apple Final Cut Express software, you can deliver a professional-quality business video or edit footage from a family event. The wide-format design of the Apple Cinema Display allows you to see both your source and destination video windows simultaneously, as well as more of your timeline than on a standard non-wide-format screen.
- Small business users will appreciate being able to view more of a spreadsheet, finance report, or database record in applications like Microsoft Office and Intuit QuickBooks.
- Gamers will love the bright colors and detailed game environments possible with the Apple Cinema Display. The graphics cards available in Power Mac G5 computers allow games to be played at high resolutions with virtually no degradation in frame rates.
- This display is ideal for home users surfing the web with Apple's Safari browser. With desktop workspace equivalent to that of a 21-inch CRT, you can have multiple browser windows open simultaneously. You can keep up on the latest news or shop online—without having to constantly toggle between windows.

The 23-inch Apple Cinema HD Display

The 23-inch Apple Cinema HD Display has enough resolution to support high-definition video content with room to spare, and it is ideal for color-critical work. This display delivers superb color in resolutions of up to 1920 by 1200 pixels. You can put it to work designing magazine layouts, editing film, or analyzing the latest protein molecule.

- Video editors using Apple's Final Cut Pro HD software can view multiple video and timeline windows on the 23-inch Apple Cinema HD Display. Its wide-format screen can display an entire high-definition video frame with ease or show multiple standard-definition videos at full size simultaneously. Using the new Digital Cinema Desktop feature of Final Cut Pro HD, you can play back full-screen HD video on the Apple Cinema HD Display, giving you superb image quality for a fraction of the cost of typical HD monitors. Add an interface from eCinema Systems, and you can even use the 23-inch Apple Cinema HD Display to view high-definition serial digital interface (HD SDI) signals used in broadcast television environments at their true intended resolution, something not possible even with expensive broadcast-grade CRT-based monitors.
- Scientific research demands high resolution and responsiveness from a computer display, both of which are specialties of the 23-inch Apple Cinema HD Display.
- The 23-inch Apple Cinema HD Display makes laying out multiple-page spreads a pleasure, with easy access to all the tools and palettes you need in applications such as Adobe Creative Suite. Designed with a pure digital interface to deliver distortion-free images and enable precision editing, this display excels at handling even the most color-critical work.

The 30-inch Apple Cinema HD Display

The 30-inch Apple Cinema HD Display delivers an amazing 2560-by-1600-pixel resolution—it's the largest LCD ever created for a personal computer. Designed specifically for the creative professional, this display provides more space for easier access to all the tools and palettes needed to edit, format, and composite your work. Combine it with the stability and advanced capabilities of Mac OS X, and you can be more productive in more applications, from page layout to video editing and DVD authoring.

With a viewing space that can only be described as vast—the 30-inch display offers a 77 percent increase in screen real estate even when compared with the 23-inch Apple Cinema HD Display—text remains sharp and distortion-free, and colors are vivid from edge to edge.

- Graphics and publishing professionals won't find a display better suited to their needs. It provides ample room to view more of your work than you ever thought possible. It's perfect for manipulating large graphics, permitting high-performance image editing in gorgeous, richly saturated colors.
- Combine the 30-inch Apple Cinema HD Display with Apple's Final Cut Pro HD, Motion, and Shake software, and you have a video and visual effects powerhouse. Its wide-format screen can display an entire high-definition video frame with ease or show multiple standard-definition videos at full size simultaneously. It also works with the eCinema Systems interface, allowing you to view HD SDI signals.
- Scientific and technical users will appreciate being able to visualize more of their work, whether they are simulating protein folding or analyzing detailed imagery obtained from a scanning electron microscope.

The 30-inch Apple Cinema HD Display requires the NVIDIA GeForce 6800 Ultra DDL graphics card, the most advanced graphics engine available for a personal computer. This card, designed specifically to support the dual-link DVI connection, delivers 2560-by-1600-pixel resolution. Not only does it drive a single 30-inch Apple Cinema HD Display, but it also supports two 30-inch displays, giving you the ultimate creative canvas.

Product Details

Apple Displays

Apple's all-digital flat-panel displays are available in three sizes to meet the needs of professional Macintosh users.

	20-inch Apple Cinema Display	**23-inch Apple Cinema HD Display**	**30-inch Apple Cinema HD Display**
Order number	**M9177LL/A**	**M9178LL/A**	**M9179LL/A**
Screen size and type	20-inch (viewable) active-matrix LCD	23-inch (viewable) active-matrix LCD	30-inch (29.7-inch viewable) active-matrix LCD
Maximum resolution	1680 by 1050 pixels	1920 by 1200 pixels	2560 by 1600 pixels
Viewing angle	170° horizontal; 170° vertical	170° horizontal; 170° vertical	170° horizontal; 170° vertical
Color support	16.7 million colors	16.7 million colors	16.7 million colors
Brightness	250 cd/m^2	270 cd/m^2	270 cd/m^2
Contrast ratio	400:1	400:1	400:1
Input/Output ports	DVI connector, two USB 2.0 ports, two FireWire 400 ports	DVI connector, two USB 2.0 ports, two FireWire 400 ports	DVI connector, two USB 2.0 ports, two FireWire 400 ports
Agency approvals	ENERGY STAR, TCO '03	ENERGY STAR, TCO '03	ENERGY STAR, TCO '03
Optional accessories	Cinema Display VESA Mount Adapter—compatible with VESA FDMI (MIS-D, 100, C) compliant mounting solutions; ADC to DVI adapter		